

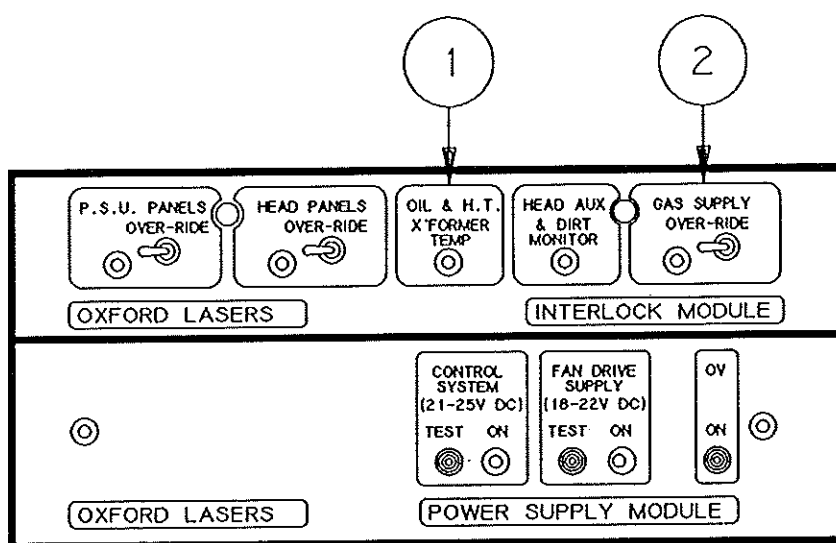
6

FAULT FINDING

6. FAULT FINDING

Fault conditions which arise due to the operation of protective interlock circuits can be identified by looking through the vision panel on the left side of the PSU. Figure 6.1 shows the positions of the interlock indicators and override controls.

If a fault cannot be identified or rectified using this manual, Oxford Lasers or its authorised distributor should be contacted.



1. Indicator (lamp)
2. Override switch (left position = not overridden)

Figure 6.1 Interlock indicators and override controls

Note: The numbers adjacent to the indicator names in the following table refer to the item numbers used to identify the indicators in section 4.2 of this manual.

Table 6.1 Fault finding

FAULT	POSSIBLE CAUSES
POWER SUPPLY ON indicator (23) not illuminated; vacuum pump not running	<ol style="list-style-type: none"> 1) Main key switch off. 2) Quick-blow power supply fuse in PSU rear panel blown. 3) Emergency Stop switch depressed and locked.
POWER SUPPLY ON indicator (23) not illuminated; vacuum pump running.	<ol style="list-style-type: none"> 1) POWER SUPPLY ON indicator lamp failure. 2) POWER SUPPLY ON indicator circuit failure.
READY indicator (17) not illuminated.	<ol style="list-style-type: none"> 1) PSU panel interlocks not closed. 2) Laser head panel interlocks not closed. 3) Thyatron oil temperature too high. 4) High Voltage transformer thermal cutout has operated. 5) Laser head dirt monitor has activated. 6) Laser head auxiliary interlock open. 7) Gas delivery pressure below 1.5 bar (gas cylinder empty, gas cylinder regulator closed, gas not connected, PSU rear panel gas select switch in wrong position). 8) READY indicator circuit failure.
READY indicator (17) flashes.	<ol style="list-style-type: none"> 1) PSU panel interlocks overridden. 2) Laser head panel interlocks overridden. 3) Gas delivery pressure interlock overridden. Note: The above three possible causes will only occur when the left hand side panel of the PSU is removed and the interlocks are deliberately overridden as part of servicing procedure by Oxford Lasers personnel, or their authorised representatives. 4) READY indicator circuit failure.
FAULT indicator (20) flashes	<ol style="list-style-type: none"> 1) One or more of the interlock circuits has been opened after the START switch has been pressed. (PSU panels, laser head panels, oil temperature, HV transformer cutout, dirt monitor, laser head auxiliary, gas delivery pressure.)

FAULT	POSSIBLE CAUSES	
FAULT indicator (20) illuminated continuously	1)	(Before start of sequence) Interlocks not OK.
	2)	(Start of sequence) Serious fault condition. Possibility of subcomponent failure.
OUT OF RANGE indicator (16) illuminated	1)	Pulse repetition frequency too high or too low.
HIGH VOLTAGE WARNING indicator (22) not illuminated after START switch pressed.	1)	Indicator circuit failure.
	2)	Auto-sequence circuit failure.
First (i.e. bottom) WARM UP indicator (19) fails to remain on when START switch pressed.	1)	Remote interlock (if fitted) activated.
	2)	Auto-sequence circuit failure.
	3)	STOP switch jammed on.
WARM UP indicators (19) fail to illuminate after START switch pressed.	1)	Auto-sequence circuit failure.
WARM UP indicators (19) illuminate with incorrect delay.	1)	Auto-sequence circuit failure.
HIGH VOLTAGE WARNING indicator (22) fails to illuminate after 7 minute delay following START	1)	External trigger selected and no external signal supplied
	2)	Thyratron controller failure.
	3)	Phase control circuit failure.
	4)	Power controller failure.
	5)	Auto-sequence circuit failure.
	6)	Auto-sequence circuit failure.